



# Australian Bureau of Statistics

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### **1994 Feature Article - Unpaid Work and the Australian Economy**

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## **UNPAID WORK AND THE AUSTRALIAN ECONOMY, 1992**

### **Introduction**

In September 1994 the ABS released an occasional paper which provided details of the value of unpaid household work and volunteer and community work in Australia. These activities constitute the major part of the (so-called) non-market sector which, together with the market sector, encompasses the total economy of a nation. This part of the non-market sector deploys without pay a large amount of human labour for the production of goods and services which are directly consumed by households without going through the market. Although these activities are "productive" in the broad sense of the term they are not generally included within the main production boundary of the national accounting framework set out by the United Nations in A System of National Accounts (SNA). Therefore, they are not recorded in gross domestic product (GDP) in the national accounts and the workers involved are not recorded in employment statistics unless they are in paid employment as well. Accordingly, until recently, the non-market sector has been given little prominence in economic statistics.

It is acknowledged, however, that institutional and labour market related changes may result in the shift of activities into (and out of) the market sector over time. Recent trends in labour force behaviour, in particular increased female participation, have resulted in a trend towards some substitution of market alternatives for unpaid work. Examples are take away meals, partially prepared meals and child care. In the opposite direction, however, greater investment in household capital (for example, microwave ovens, washing machines and clothes dryers) has permitted substitution of market alternatives by unpaid household work. Moreover, in accordance with changes in the business cycle, there can be a shift of labour from/to the market sector to/from the non-market sector. Changes in GDP over time need to be viewed in the context of such developments.

### **Background to ABS estimates of the value of unpaid work**

In February 1990, the ABS released results of its first investigation into unpaid household work in an information paper Measuring Unpaid Household Work, Issues and Experimental Estimates (cat. no. 5236.0). It contained four main sets of estimates of the value of unpaid household and volunteer work, each based on different assumptions concerning the wage rates which should be used to value the work, and with male and female contributions shown separately. The estimates of time spent on various household activities were obtained from a pilot time use survey run in Sydney over a two week period in late May and early June 1987. Therefore, the data were deficient in that they did not take into account either regional or seasonal variations. Despite these shortcomings, the ABS considers that the experimental estimates provided a reasonable indication of the likely order of magnitude of unpaid household work.

During 1992, the ABS conducted a more comprehensive time use survey throughout Australia. This article provides some background on recent work within the ABS based on the output from that survey.

The experimental estimates produced in the initial information paper were extended and refined when the 1992 time use survey results became available and a comparison was able to be made between the 1992 results and those for 1986-87. Throughout the rest of this article the aggregate value of unpaid household work and volunteer and community work in Australia is referred to as "total unpaid work".

## **Approaches to measuring unpaid work**

There are two basic approaches to measuring unpaid work: the "direct" or "output" method; and the "indirect" or "input" method. The first method requires data on the quantities of services produced and involves measuring output by applying appropriate prices to these quantities. This method is considered to be conceptually superior because it adopts the same approach as that used to value market production and is therefore appropriate at the macro-economic level for comparisons with national accounting aggregates. At present the ABS does not collect the data required to calculate estimates of the value of total unpaid work using this method and hence the "indirect" or "input" method has been used. This was also the method used for the experimental estimates of the value of total unpaid work for 1986-87. It involves valuing output in terms of the cost of the inputs and requires information about the time spent on various aspects of unpaid work. Such information is provided by time use surveys.

The ABS investigated four alternative methods of valuing total unpaid work. There are two broad approaches which can be adopted for the input method and there are two alternative valuation methods associated with each. The first approach is referred to as the "market replacement cost" method and the second is the "opportunity cost" method.

The **market replacement cost** approach measures what it would have cost households to hire someone to do the household work on their behalf. There are two variants of this approach:

- individual replacement cost; and
- housekeeper replacement cost.

The **individual replacement cost** method assigns values to the time spent on household production by household members according to the cost of hiring a market replacement for each individual function.

The **housekeeper replacement cost** method values the time spent on household work by household members according to the cost of hiring a housekeeper to undertake the relevant tasks.

The **opportunity cost** approach measures what household members would have earned had they spent the same amount of time on paid work as they spent on unpaid work. The theoretical basis of this approach is the assumption that the value of time spent doing unpaid work at home equals the opportunity costs of working elsewhere. In other words, it is based on the assumption that the worker has given up paid work in order to perform unpaid work and that its value is equal to a normal hourly wage in the market. There are also two variants of this approach:

- gross opportunity cost; and

- net opportunity cost.

The main disadvantage of either variant of the opportunity cost approach relates to determining the opportunity cost of an unpaid worker. It is not necessarily the wage that the worker is normally paid. For example, if there are two unpaid workers identical in relation to house, family size and all other factors except that one normally earned an hourly wage three times that of the other, then the opportunity cost method would result in the value of one's unpaid work being three times that of the other, which is obviously an unrealistic concept.

It should be noted that there are no international standards specifying the preferred "input" method of estimating total unpaid household work.

The problems associated with the opportunity cost approach provide the main reason for the ABS opting for the individual function replacement cost method as its preferred alternative. Also, it is conceptually similar to the approach specified in the framework used in the Australian national accounts (currently, the 1968 version of the SNA) for valuing other non-market output.

As noted above, the individual function replacement cost method assigns values to the time spent on household production by household members according to the cost of hiring the market replacement for each individual function. For example, time spent on cleaning would be valued using a rate of pay for commercial cleaning, child minding according to the rate of pay for child care workers, etc. This method depends on the key assumption that household members and market replacements are equally productive in their work activities. However, it is not easy to assign an appropriate market rate of pay to the corresponding household activity because commercial rates may embody a level of skill, responsibility or capital not required or reflected in household production. To take an example, it would obviously be inappropriate to value the time spent on all household production in the form of cooking at the rates paid in the market to professional chefs. The application of commercial rates will also be inappropriate where there are differences in productivity between household and market sectors due to economies of scale or the availability of expensive equipment in commercial operations.

## **Time use surveys**

The major input required to produce estimates of total unpaid work is data from a time use survey, which examines how people allocate their time to different kinds of activities in relation to their personal characteristics (demography, socio-economic, etc). As mentioned earlier, the ABS conducted a full time use survey throughout Australia in 1992 following on from a pilot survey which was conducted in Sydney in May 1987. The 1992 national survey was conducted over a fortnightly period in February/March, May/June, August/September and October/November 1992. It covered approximately 4,400 households across Australia and close to 8,300 individual questionnaires. All persons aged 15 years and over in the selected households were surveyed for their use of time over a 48 hour period except for members of the permanent defence forces and overseas residents.

## **Wage rate and population data**

Wage rate data used in valuing the labour input data were averages for all persons for the whole of Australia within each relevant labour category. Population estimates were based on the ABS monthly labour force estimates of the civilian population aged 15 years and over by sex, marital status, labour force status, and age.

## **Main results**

Using the individual replacement cost method, the value of total unpaid work in Australia for 1992

is estimated to be \$227.8 billion, which is about 58% of gross domestic product as measured in the Australian national accounts. There was an increase in the share of volunteer and community work from around 5 to 6 per cent of the value of total unpaid work in 1986-87 to about 8 per cent in 1992.

Females were the main contributors to unpaid work. They were estimated to contribute about 65% of total unpaid work in 1992. However, males and females contributed almost equally to the volunteer and community work component in 1992.

The tables below provide the main results for 1992 and some international comparisons. A more detailed set of results and a comprehensive description of the concepts underlying the estimates of unpaid work are provided in **Occasional Paper: Unpaid Work and the Australian Economy, 1992** (cat. no. 5240.0).

**TABLE 1. UNPAID HOUSEHOLD WORK: DOMESTIC ACTIVITIES, CHILDCARE, AND PURCHASING GOODS AND SERVICES, AUSTRALIA 1992**  
Individual Function Replacement Cost Estimation Method - Persons' Wage Rate

Sex/Employment Status	Marital Status	Weekly Hours	Wage Rate	Population	Value of Unpaid Household Work
		(hr)	(\$/hr)	('000)	(\$ billion)
<b>FEMALE</b>					
Employed	Married	34.66	11.90	2,070	44.7
	Not Married	17.13	11.98	1,141	12.2
	Total	28.43	11.92	3,211	56.9
Not Employed	Married	44.56	11.85	2,104	58.2
	Not Married	28.56	11.84	1,376	24.3
	Total	38.23	11.85	3,480	82.5
Employed/ NotEmployed	Married	39.65	11.88	4,174	102.9
	Not Married	23.38	11.88	2,517	36.5
	Total	33.53	11.88	6,691	139.4
<b>MALE</b>					
Employed	Married	16.44	12.16	3,050	31.9
	Not Married	9.96	12.07	1,344	8.4
	Total	14.46	12.14	4,394	40.3
Not Employed	Married	27.94	11.99	1,206	21.1
	Not Married	14.68	11.98	964	8.9
	Total	22.05	11.98	2,170	30.0
Employed/ Not Employed	Married	19.70	12.09	4,256	53.0
	Not Married	11.93	12.02	2,308	17.3
	Total	16.97	12.07	6,564	70.3
<b>ALL PERSONS</b>				13,255	209.7

**TABLE 2. VOLUNTEER AND COMMUNITY WORK, AUSTRALIA, 1992**  
Replacement Cost Estimation Method - Persons' Wage Rate

Sex	Employment Status	Weekly Hours	Wage Rate	Population	Value of Volunteer and Community Work
		(hr)	(\$/hr)	('000)	(\$ billion)
FEMALE	Employed	1.94	12.17	3,211	4.0

MALE	Not Employed	2.40	12.17	3,480	5.3
	Employed/Not Employed	2.17	12.17	6,691	9.3
	Employed	1.65	12.17	4,394	4.6
	Not Employed	3.07	12.17	2,170	4.2
	Employed/Not Employed	2.10	12.17	6,564	8.8
	ALL PERSONS			13,255	18.1

**TABLE 3. INTERNATIONAL COMPARISONS OF UNPAID WORK**

Estimation method	Author	Country	Date of study	Reference year	% of GDP or GNP
Individual function replacement cost	Adler and	Canada	1978	1971	40 (GDP)
	Hawrylshyn	USA	1982	1976	44 (GNP)
	Murphy				
	Central Bureau of Statistics	Norway	1989	1981	39 (GDP)
	Statistics Canada	Canada	1994	1992	41 (GDP)
	NZ Department of Statistics	New Zealand	1991	1991	52 (GDP)
	ABS	Australia	1990	1986-87	52 (GDP) (a)
			1994	1992	57 (GDP) (b)
					58 (GDP)

(a) Award wage rate. (b) Adjusted award wage rate.

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